ACS Photonics

Editorial

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Welcome to ACS Photonics

Harry A. Atwater, Editor-in-Chief

Welcome to *ACS Photonics*! As we begin 2014, it is now apparent more than ever that many of the most important scientific and technological problems facing us are fundamentally optical in nature. Examples abound, but they include probing excited states in molecules, creating complex organic and inorganic materials and nanoscale structures and solids, gaining a fuller understanding of photosynthesis and generating fuel from sunlight, creating integrated photonic components to overcome our communications bottlenecks, watching ultrafast molecular processes, designing metamaterials, creating efficient molecular and polymer light emitters, and characterizing single atomic layer materials (e.g., graphene, BN, MoS_2).

The field of photonics has become more interdisciplinary, and in the last 10 years, laser-based and photonic methods have both grown in importance and become ubiquitous across the sciences outside of the optics community. Many photonic methods of design and characterization, which were once the province of optical specialists, have become pervasive throughout the scientific landscape. Also, optical specialists have expanded their use of new materials and micro- and nanoscale fabrication methods that have stretched the photonics field past traditional boundaries. An explosion of interest in research focused on new functional materials, driven by advances in materials theory and powerful synthesis methods, has dictated that photonics researchers become experts in both an electromagnetic theory-based description of their innovations and also the structure and properties of their constituent materials.

Another significant trend in photonics is the internationalization of the field, accompanied by worldwide recognition of the scientific, societal, and commercial importance of scientific advances in photonics that lead to new technologies and capabilities to augment human progress. This growing visibility of the importance of photonics is reflected by a resolution adopted late in 2013 by the UN General Assembly declaring 2015 to be the International Year of Light and Light-Based Technologies. Many countries have recognized the strategic importance of photonics to advanced technologies that propel their economic development. At the research frontier, advances on one continent provide the scientific inspiration for new concepts on another, and *ACS Photonics* is poised to play a prominent role in promoting rapid international cross-catalysis of ideas and concepts. I will say more in the future from this editorial corner about photonics initiatives around the world.

ACS Photonics embraces the exciting scientific opportunity to bridge disciplinary gaps and promote rich cross-fertilization of knowledge between chemistry, physics, and engineering in the field of photonics. Given the growth in both topical diversity and complexity within our field, there is expanding need for an interdisciplinary forum where chemists, physicists, and engineers together report the research advances that build the future foundations of photonics. We invite you to join the *ACS Photonics* community as an active partner by reporting your important research advances, ideas, and thoughts.

Among the features of *ACS Photonics* will be research Letters and Articles and forward-looking Perspectives, Reviews, and Editorials, which together can provide a comprehensive view of developments in scientific research. This portfolio of modes of publication is designed to enable a wide range of choices to communicate photonics research advances flexibly and in a manner that promotes both disciplinary depth and interdisciplinary breadth, expanding the scientific reach of authors, editors, and the field as a whole. The range of *ACS Photonics* is intentionally diverse and representative of the directions of scientific progress for the entire photonics field. The journal is not defined so much by topical scope, which is indeed quite broad. Rather, it is defined more by expectations of quality, impact, interdisciplinary features, and a focus on addressing important problems at the research frontier of photonics. At its outset, *ACS Photonics* is already advantaged by having a very wide scientific dissemination and is available to more than 5000 institutional subscribers around the world.

Finally, I want to thank fellow editor Teri Odom and the capable ACS staff for bringing *ACS Photonics* to the light of day in this inaugural issue.

AUTHOR INFORMATION

Notes

Views expressed in this editorial are those of the author and not necessarily the views of the ACS.

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